WHAT IS CLAIMED IS:

1. A method of modeling of the visible world using full-surround image data, said method comprising:

selecting a view point within a p-surface;

selecting a direction of view within the p-surface;

texture mapping full-surround image data onto said p-surface such that the resultant texture map is substantially equivalent to projecting full-surround image data onto the p-surface from said view point to thereby generate a texture mapped p-surface; and

displaying a predetermined portion of said texture mapped p-surface.

2. The method as recited in claim 1, further comprising rotating said texture mapped p-surface so as to simulate rotating the direction of view in the opposite direction.

3. The method as recited in claim 1, wherein said method further comprises interactively changing said direction of view to thereby expose a corresponding portion of said texture mapped p-surface.

4. The method as recited in claim 1, wherein a viewer is allowed to interactively alter at least one of focal length or an angle of view relative to said textured mapped p-surface to thereby vary the displayed portion of said texture mapped p-surface.

5. The method as recited in claim 1, further comprising:

selecting a new viewpoint;

repeating said texture mapping step using said new viewpoint; and

redisplaying said predetermined portion of said p-surface,

whereby a first image portion occupying said predetermined portion displayed during the displaying step is different than a second image portion occupying said predetermined portion during

the redisplaying step.

6. The method as recited in claim 5, wherein said selecting step comprises interactively selecting said new viewpoint.

7. The method as recited in claim 5, wherein a first said texture mapped p-surface is replaced by a second texture mapped p-surface by interactively selecting said new viewpoint from viewpoints within said second texture mapped p-surface.

8. The method as recited in claim 5, wherein the new viewpoint is close to the surface of said p-surface.

9. The method as recited in claim 1, further comprising:
selecting a new viewpoint; and
redisplaying said predetermined portion of said p-surface,
whereby a first image portion occupying said predetermined portion displayed during the
5   displaying step is different than a second image portion occupying said predetermined portion during the redisplaying step.

10. The method as recited in claim 9, wherein said selecting step comprises interactively selecting said new viewpoint.

11. The method as recited in claim 9, wherein the new viewpoint is close to the surface of
10   said p-surface.

12. A method for interactively viewing a model of the visible world formed from full-surround image data, comprising:
providing said full surround image data;

selecting a view point within a p-surface;

15   establishing a first direction of view within the p-surface;

texture mapping full-surround image data onto said p-surface such that the resultant texture map is substantially equivalent to projecting full-surround image data onto the p-surface from said view point to thereby generate a texture mapped p-sphere;

interactively changing said direction of view to thereby select a second direction of view; and

20   displaying a predetermined portion of said texture mapped p-sphere as said texture mapped p-sphere moves between the first and second directions of view.

13. The method as recited in claim 12, wherein the interactively changing step results in rotating said texture mapped p-sphere so as to simulate rotating the direction of view in the opposite direction.

14. An apparatus for interactively viewing a model of the visible world formed from full-surround image data stored in memory, comprising:

means for selecting a view point within a p-surface;

means for establishing a first direction of view within the p-surface;

5   means for texture mapping full-surround image data onto said p-surface such that the resultant texture map is substantially equivalent to projecting full-surround image data onto the p-surface from said view point to thereby generate a texture mapped p-sphere;

means for interactively changing said direction of view to thereby select a second direction of view; and

10   means for displaying a predetermined portion of said texture mapped p-sphere as said texture mapped p-sphere moves between the first and second directions of view.

15. The apparatus as recited in claim 14, wherein the interactively changing means effectively rotates said texture mapped p-sphere so as to simulate rotating the direction of view in the opposite direction.

16. The apparatus as recited in claim 14, wherein said selecting means, said establishing means, said texture mapping means, and said interactively changing means comprise software devices.